

FIG.1

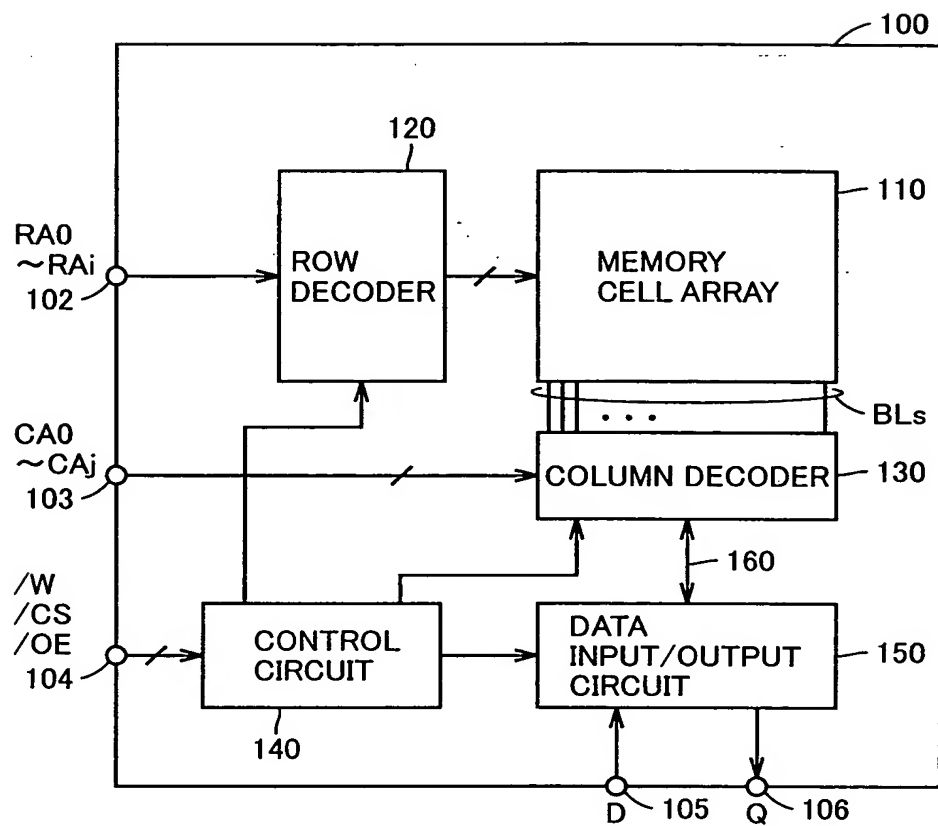


FIG.2

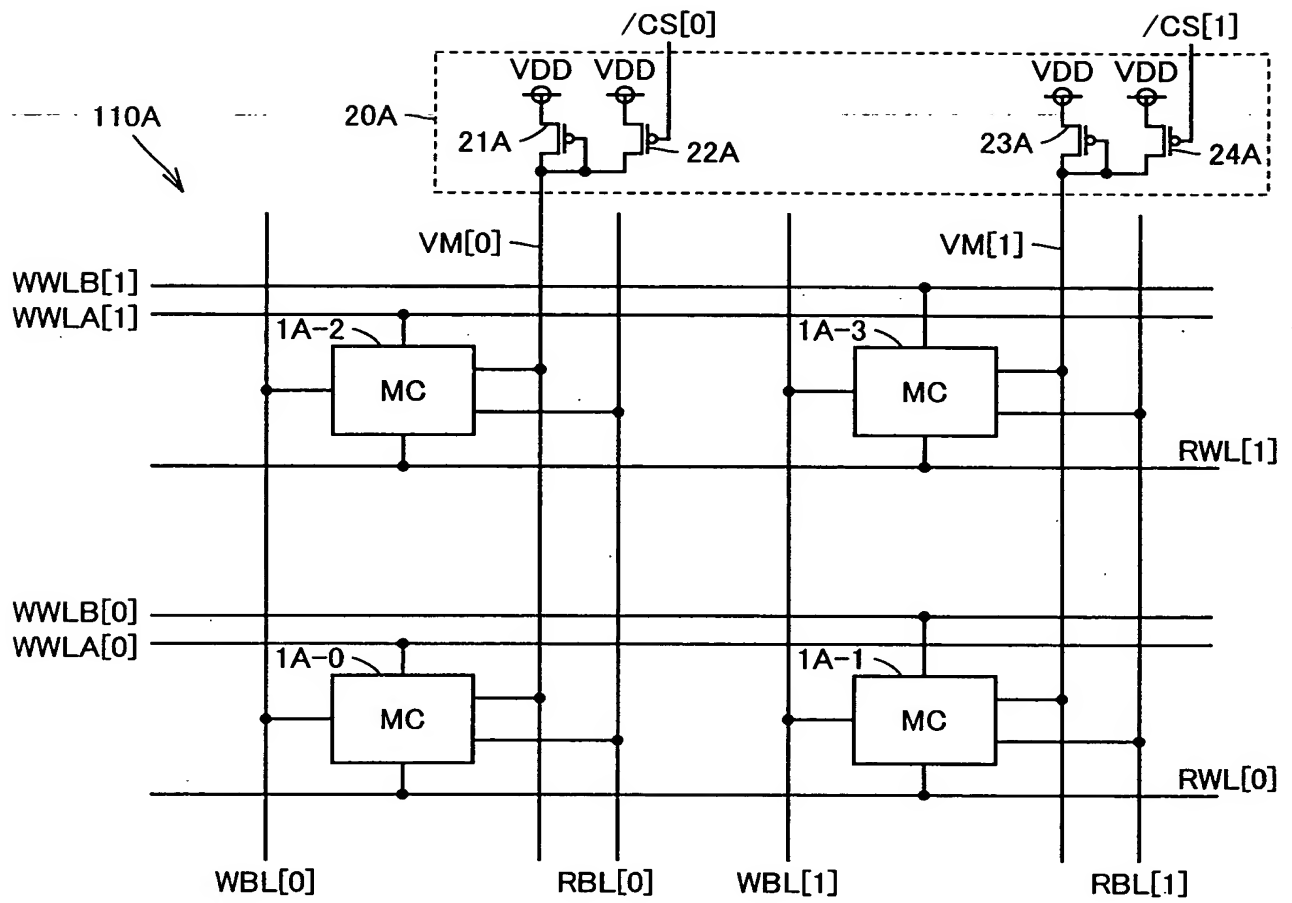


FIG.3

1A

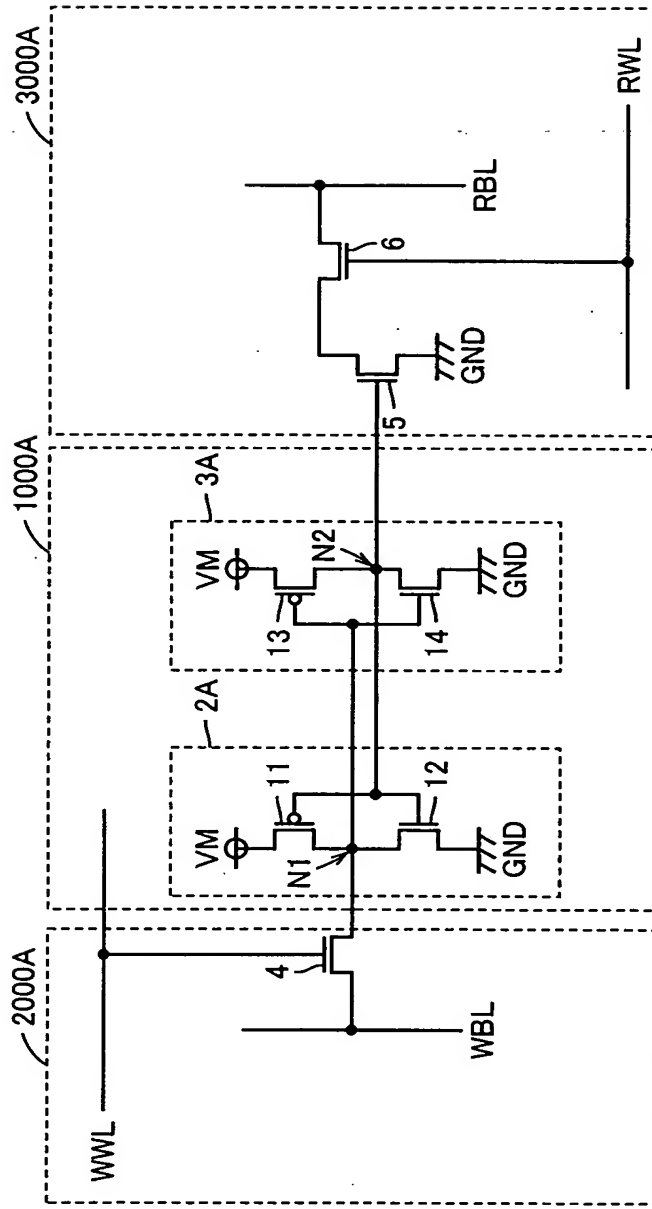


FIG.4

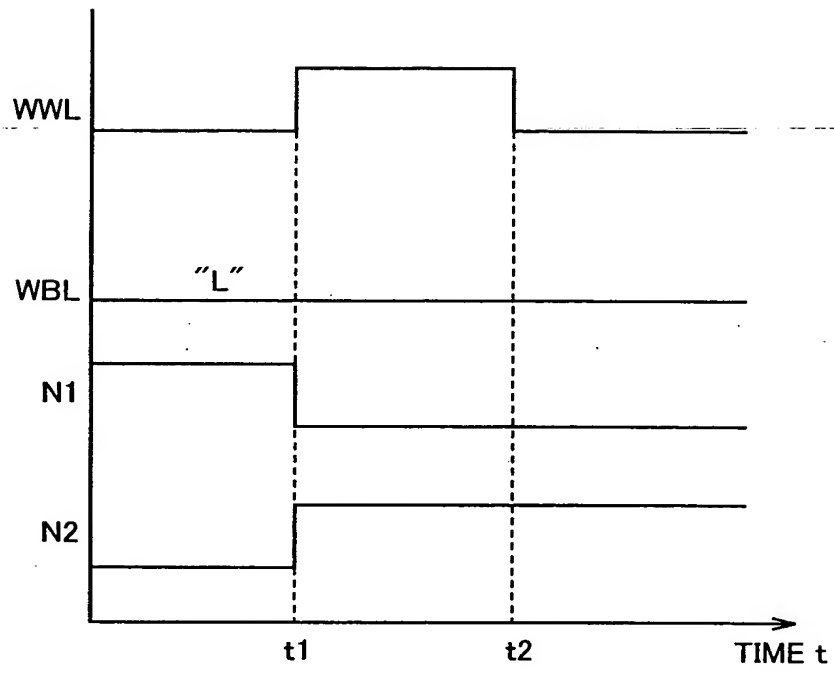


FIG.5

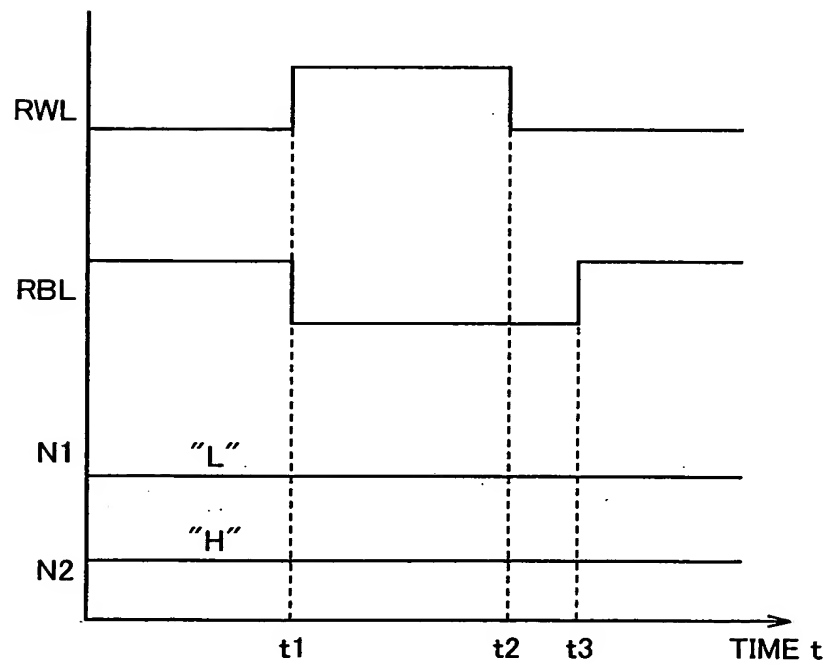


FIG.6

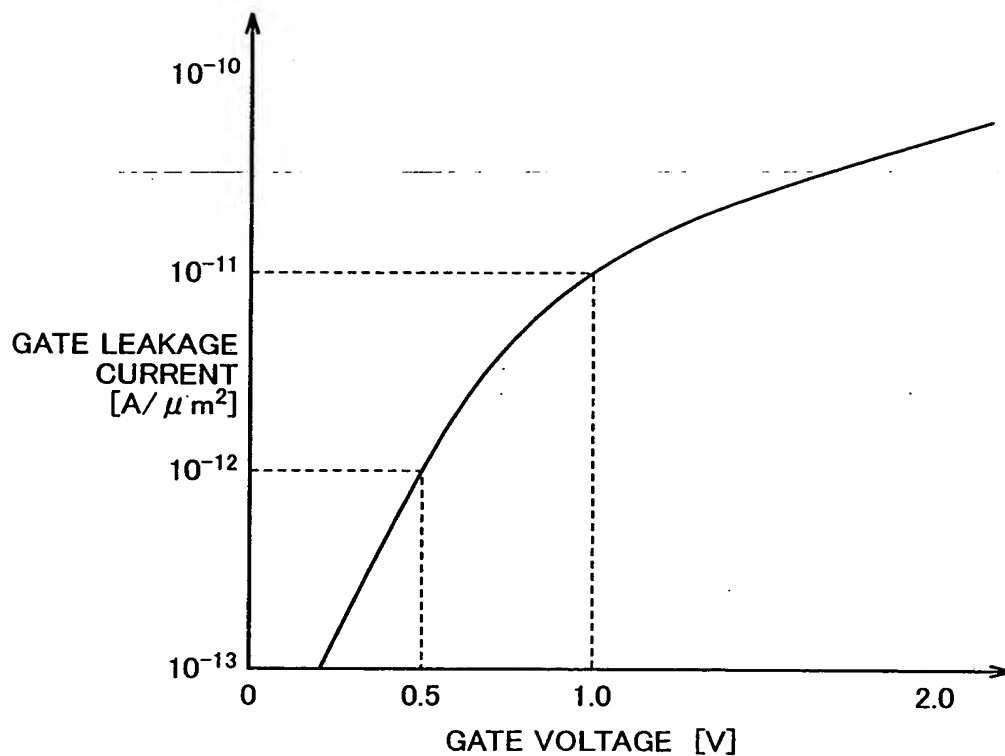


FIG.7

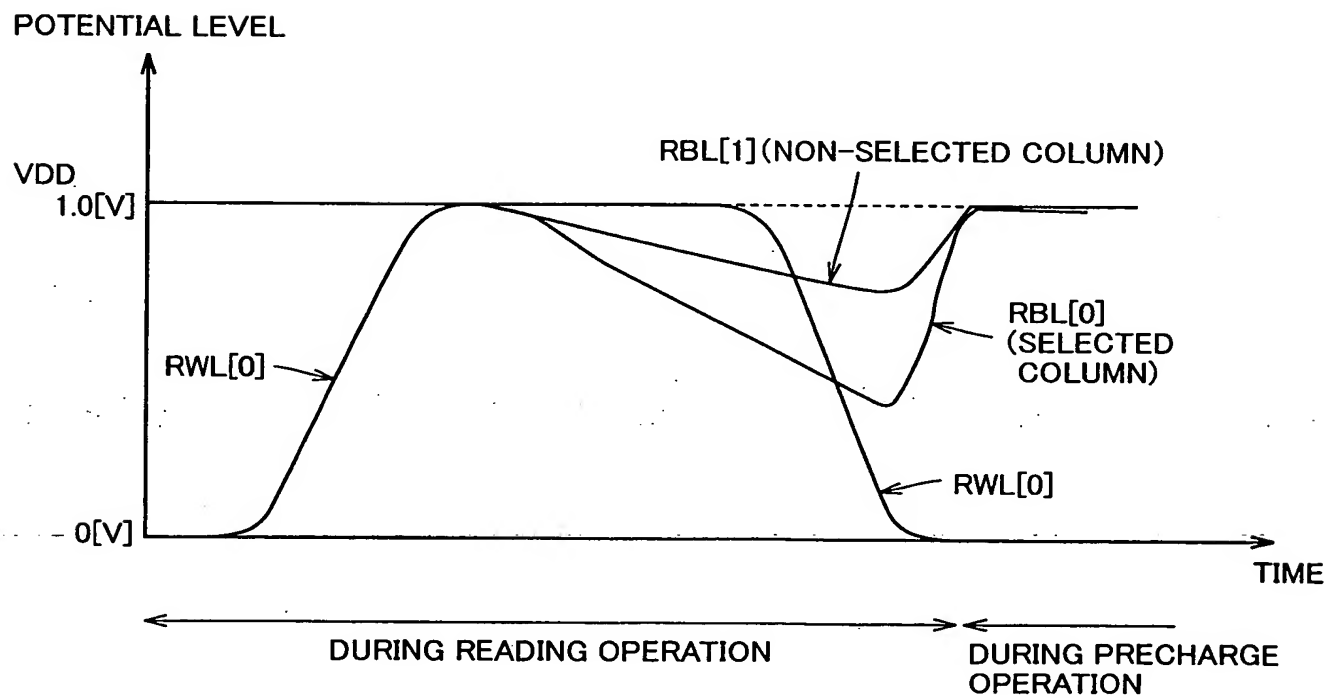


FIG.8

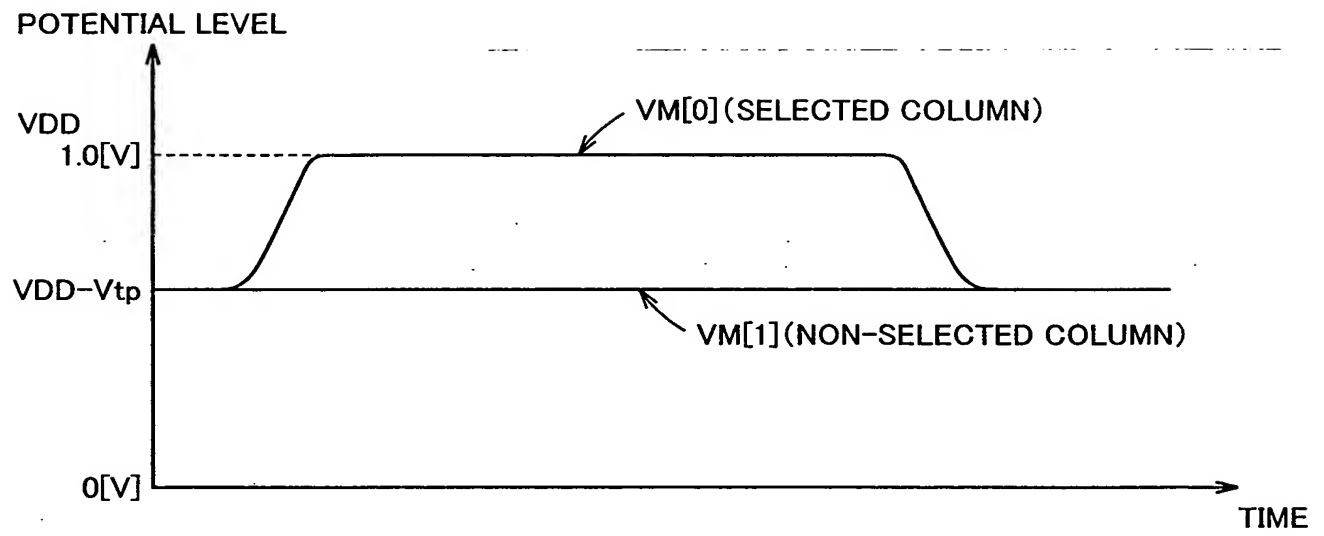


FIG.9

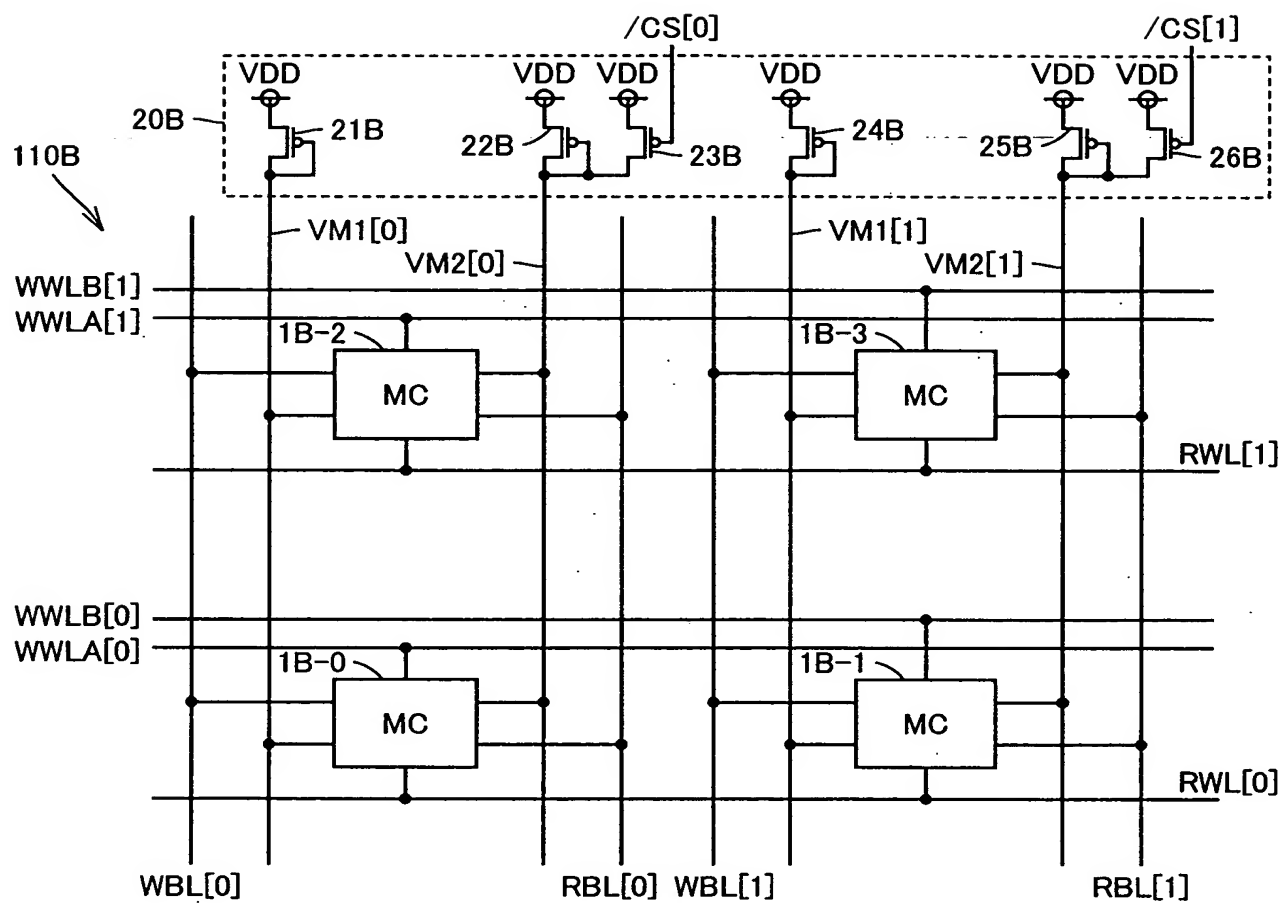


FIG.10

1B

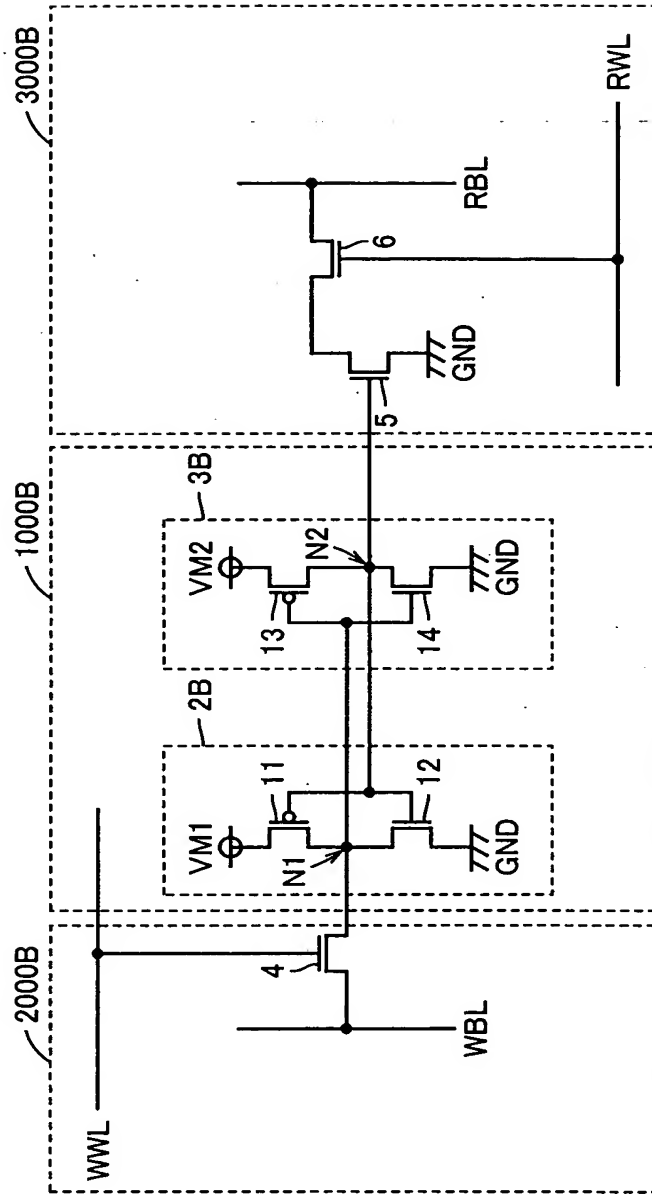




FIG.11

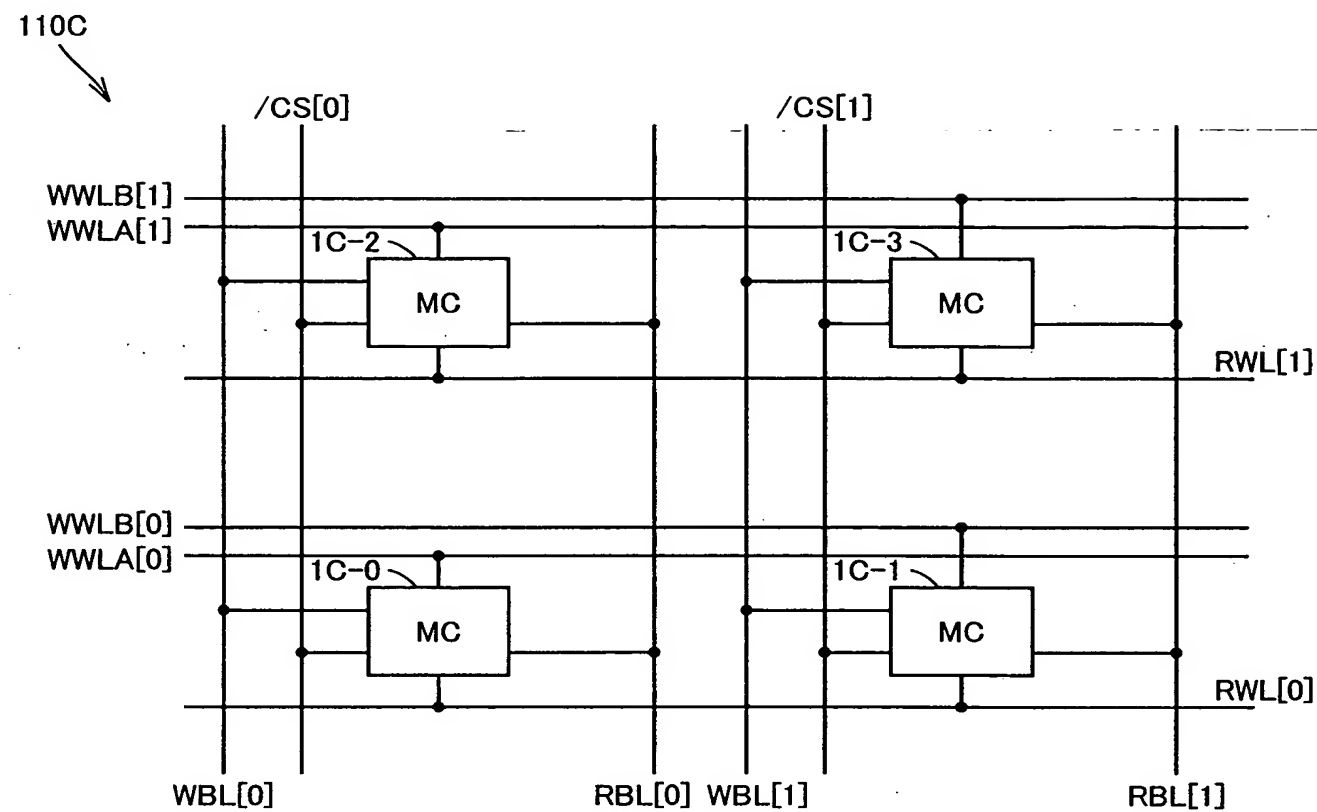


FIG.12

1C

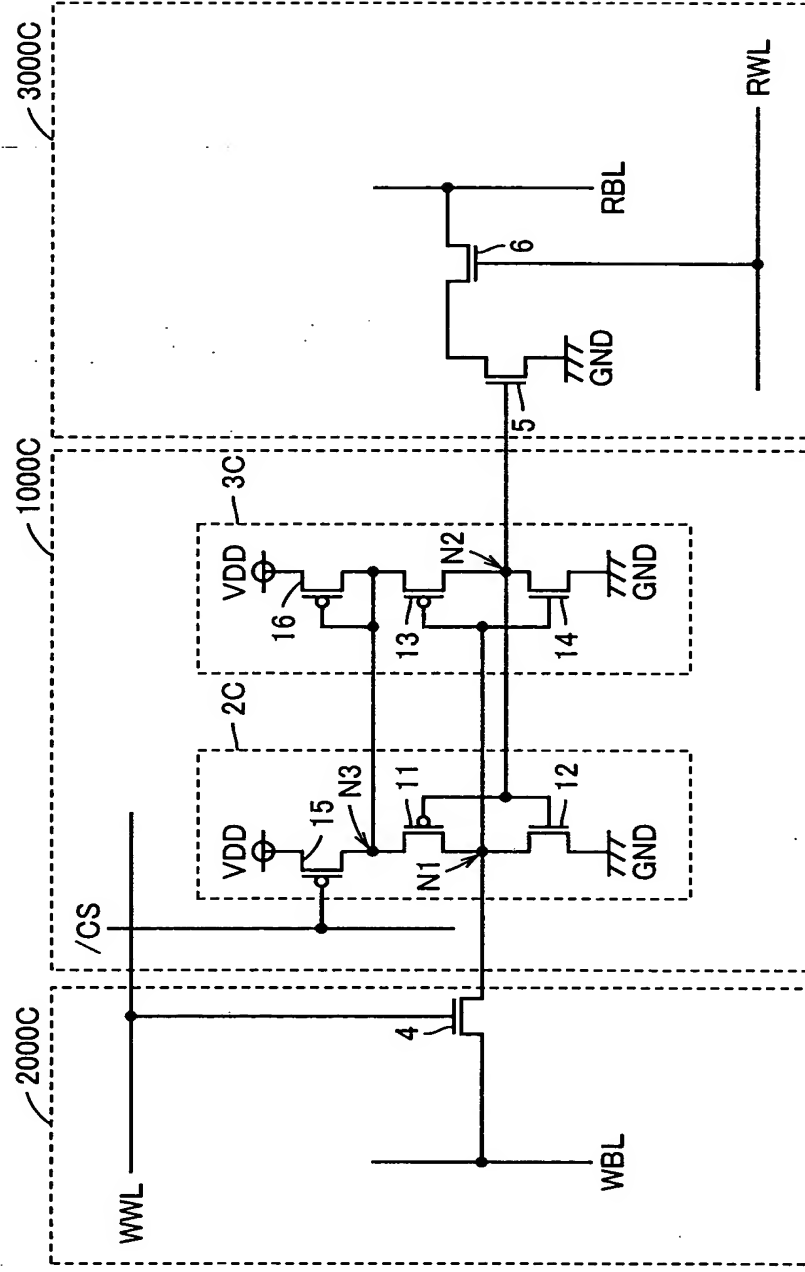


FIG.13

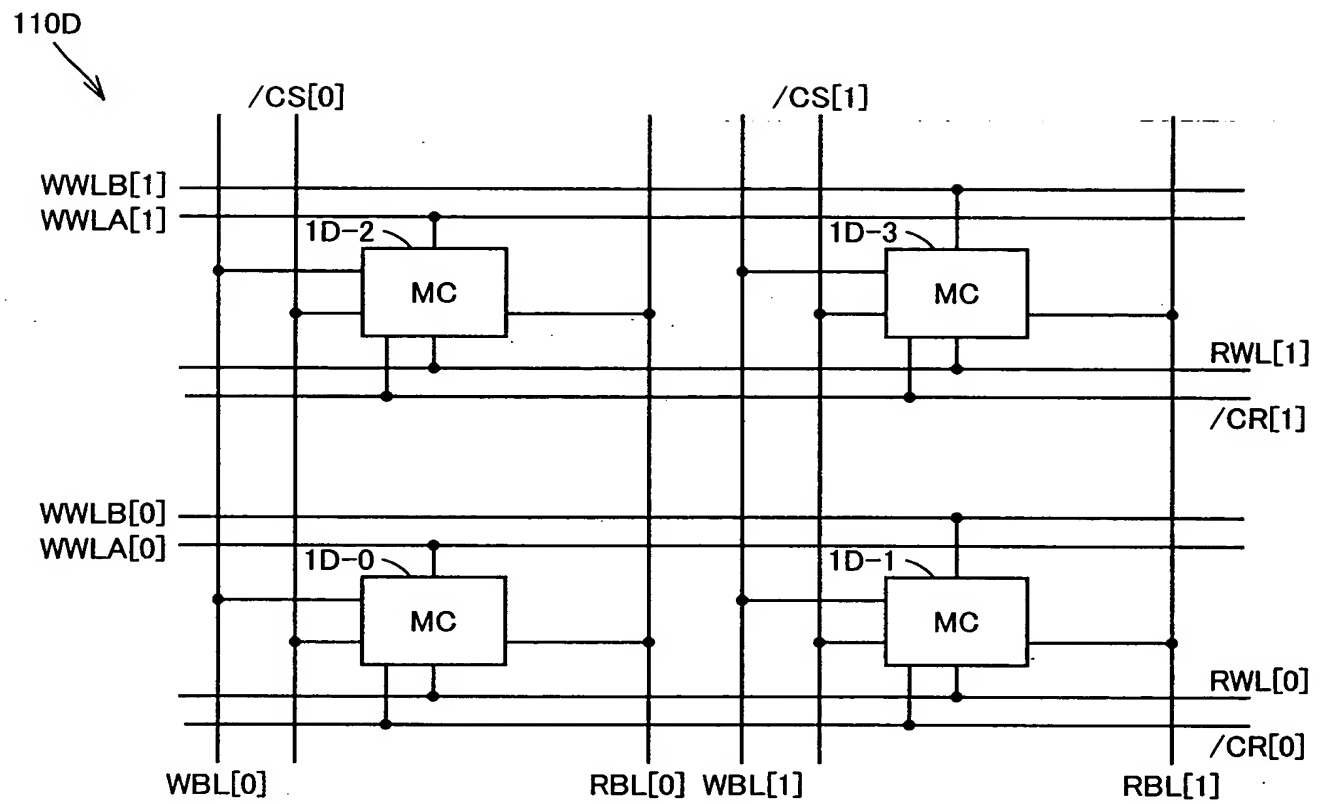


FIG.14

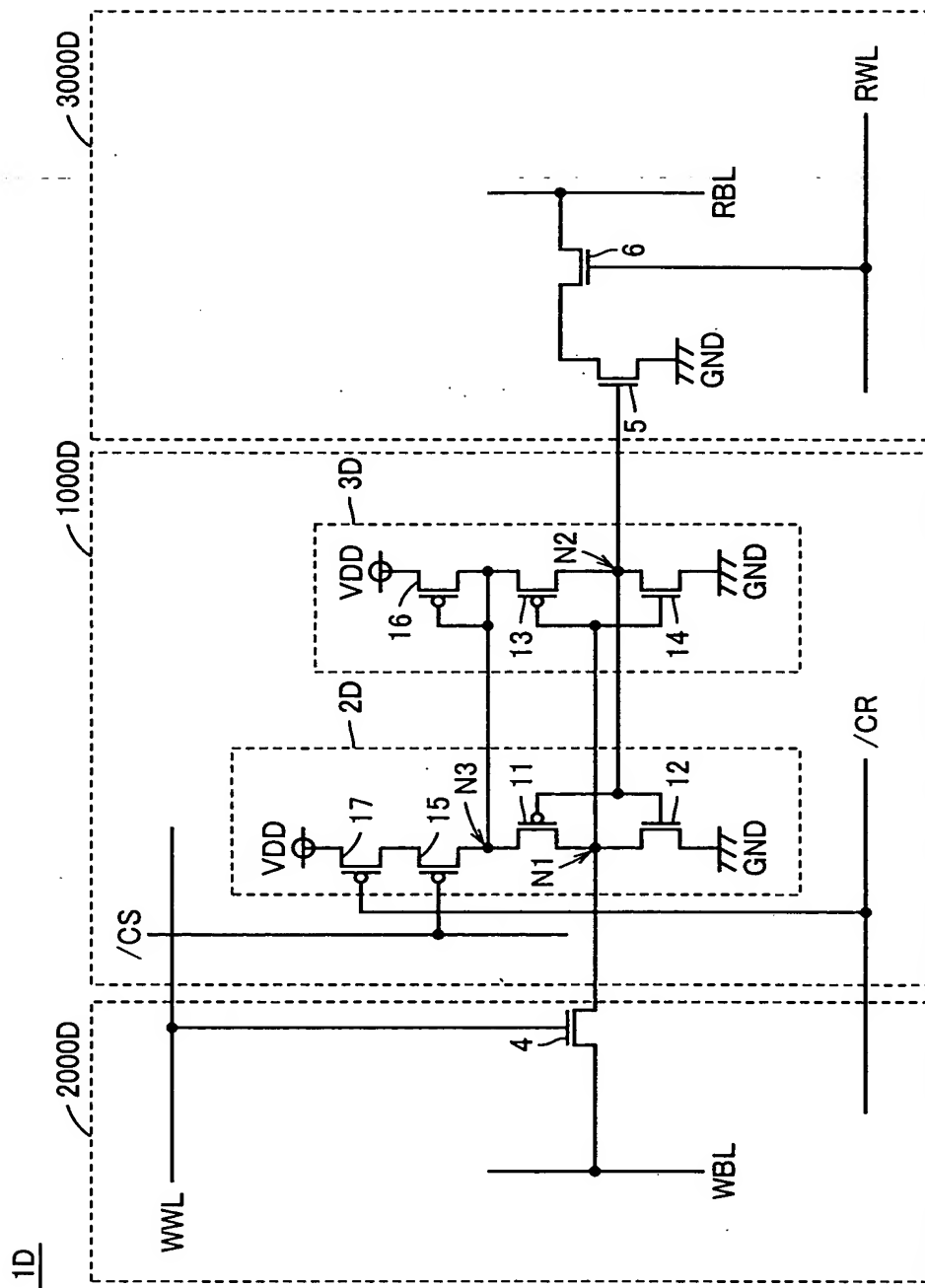


FIG.15

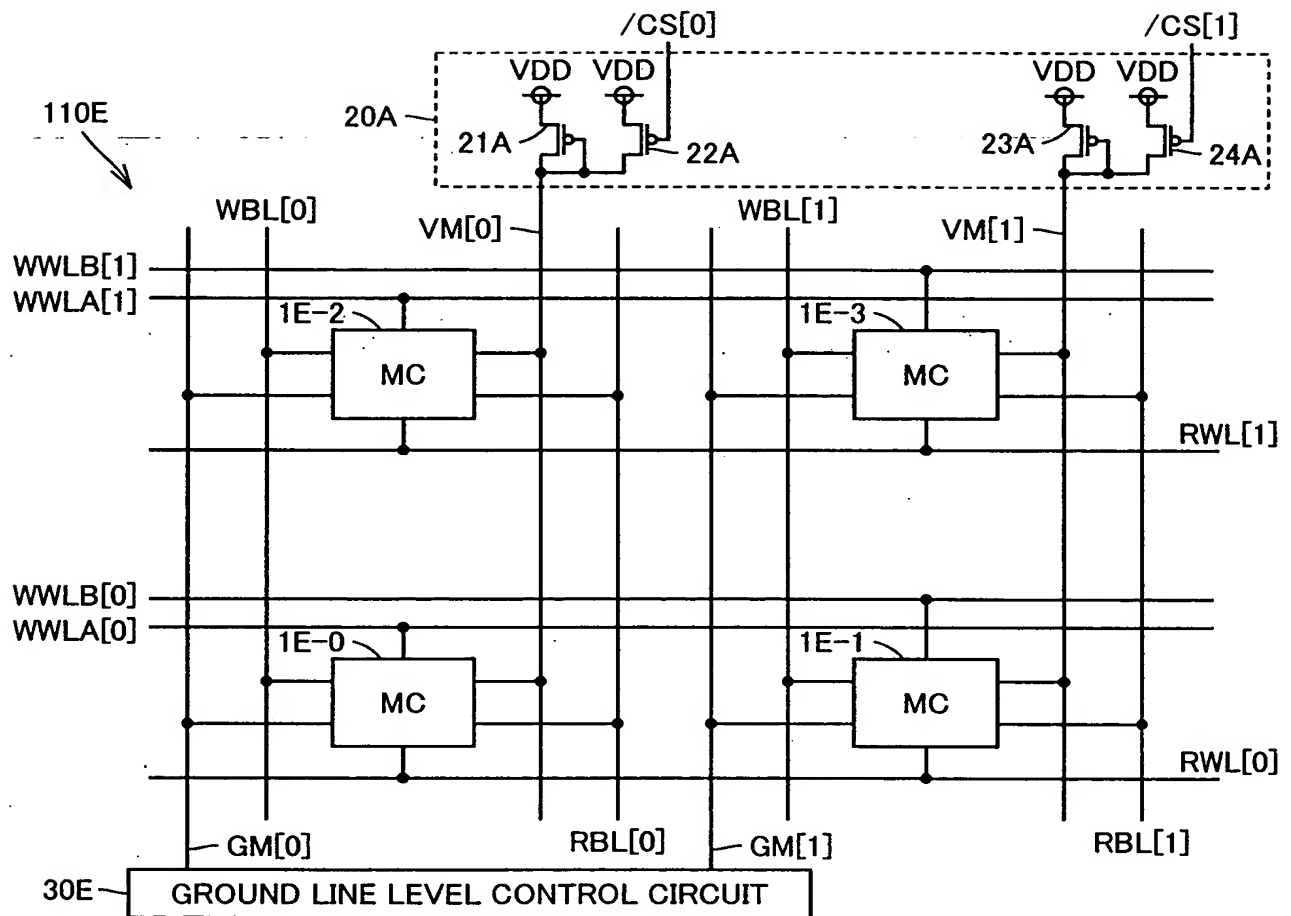


FIG.16

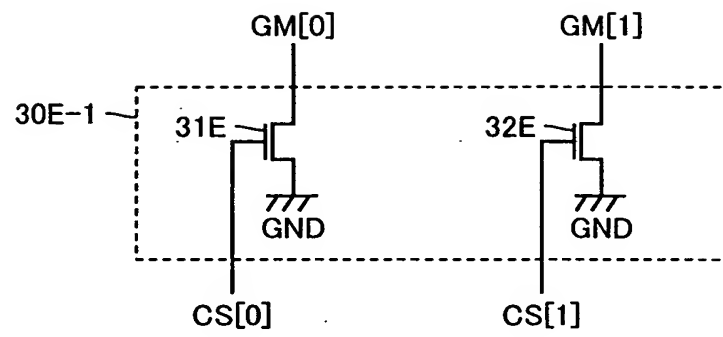


FIG.17

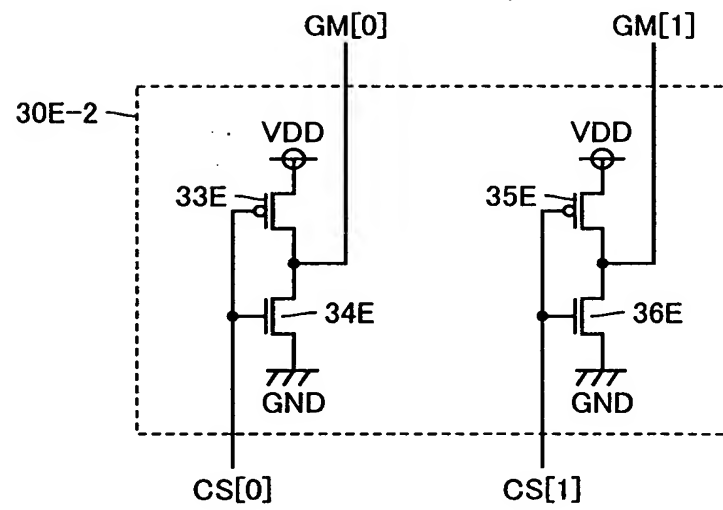


FIG.18

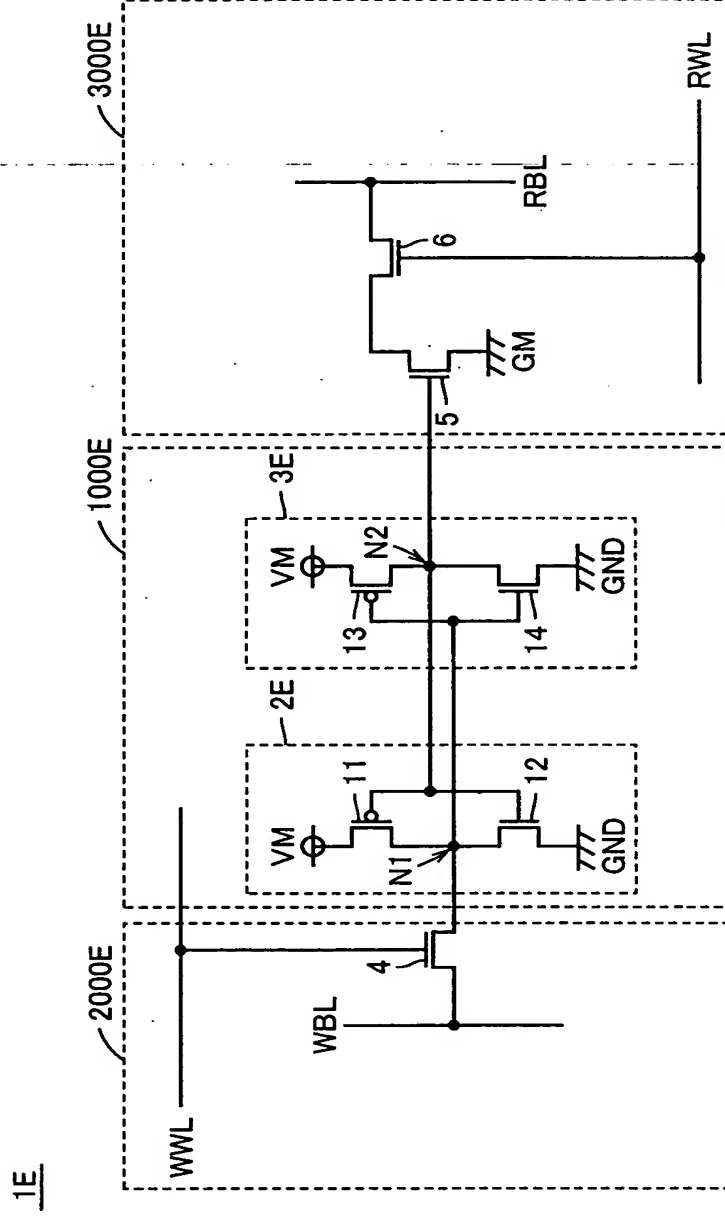


FIG.19

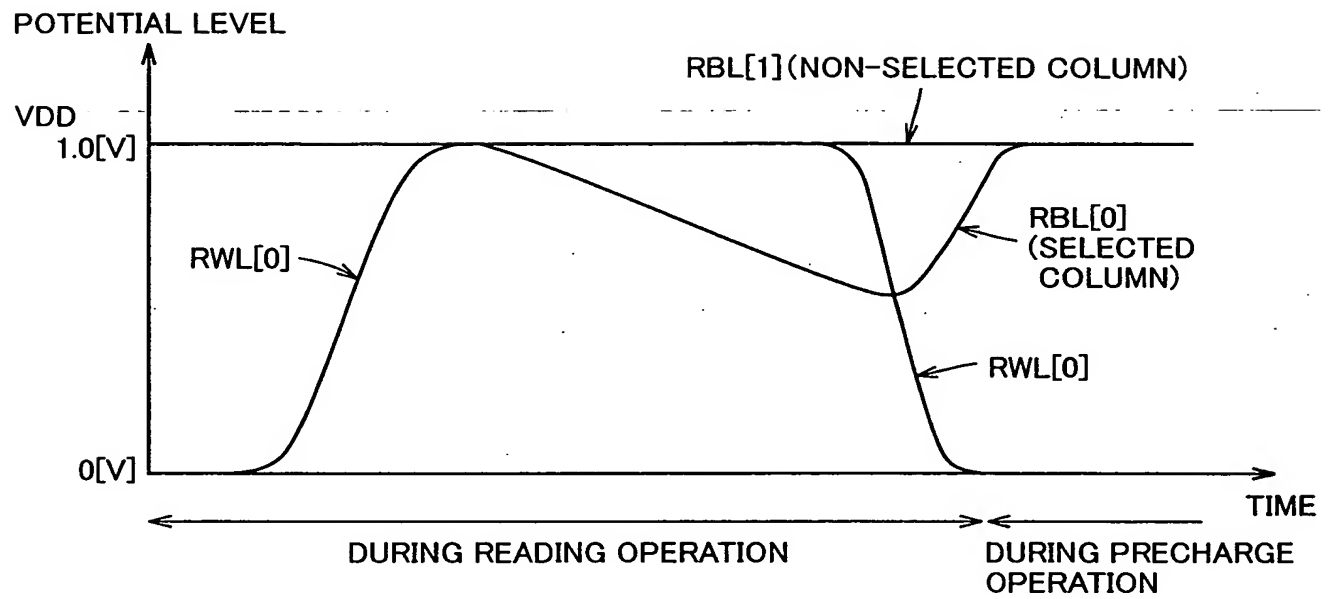


FIG.20

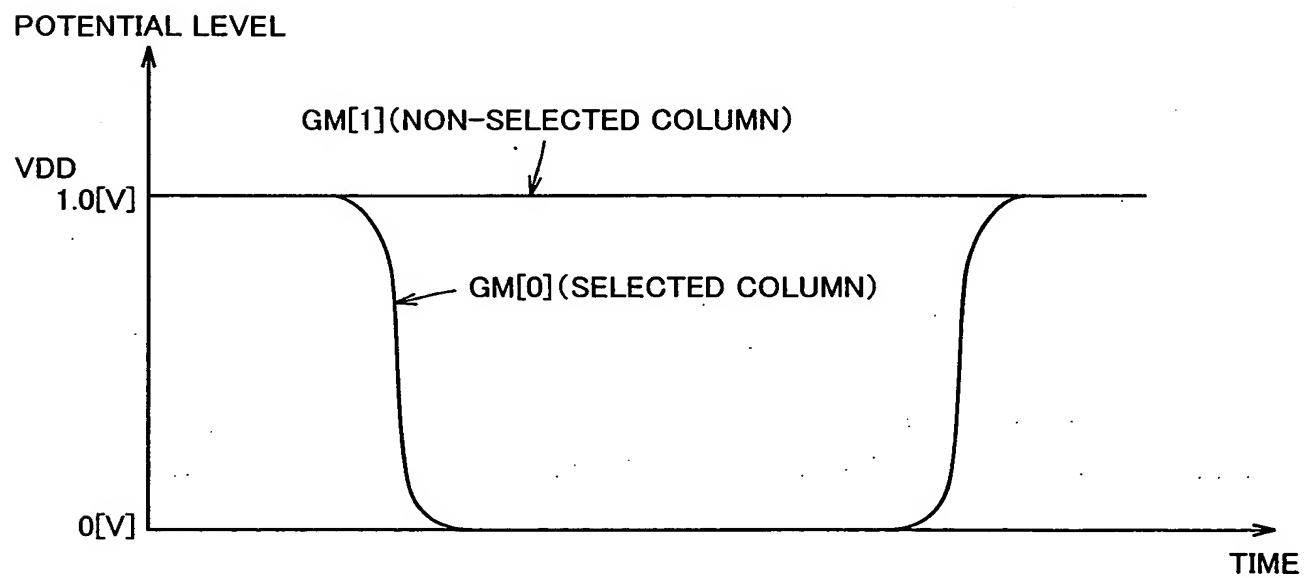




FIG.21

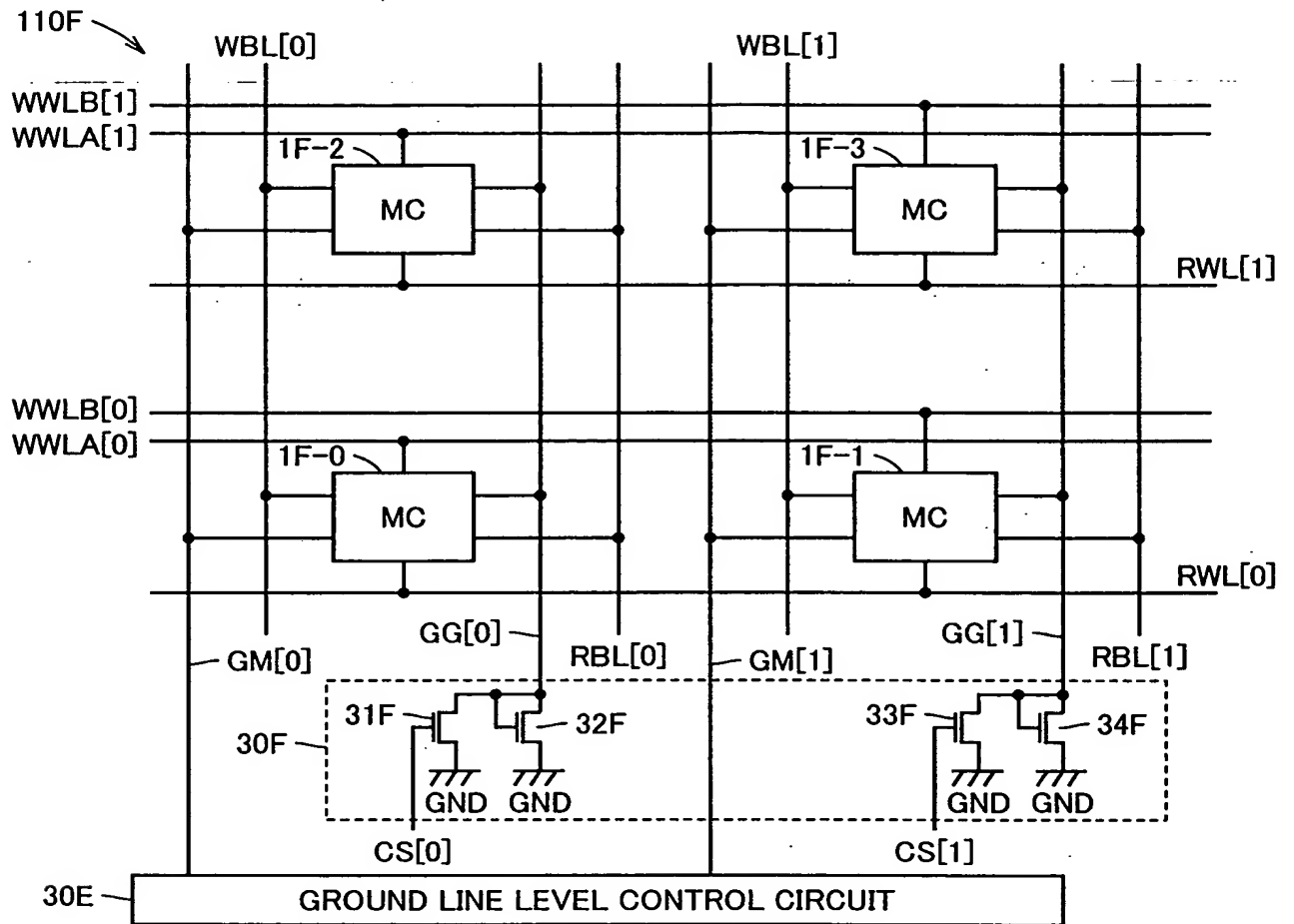


FIG.22

1F

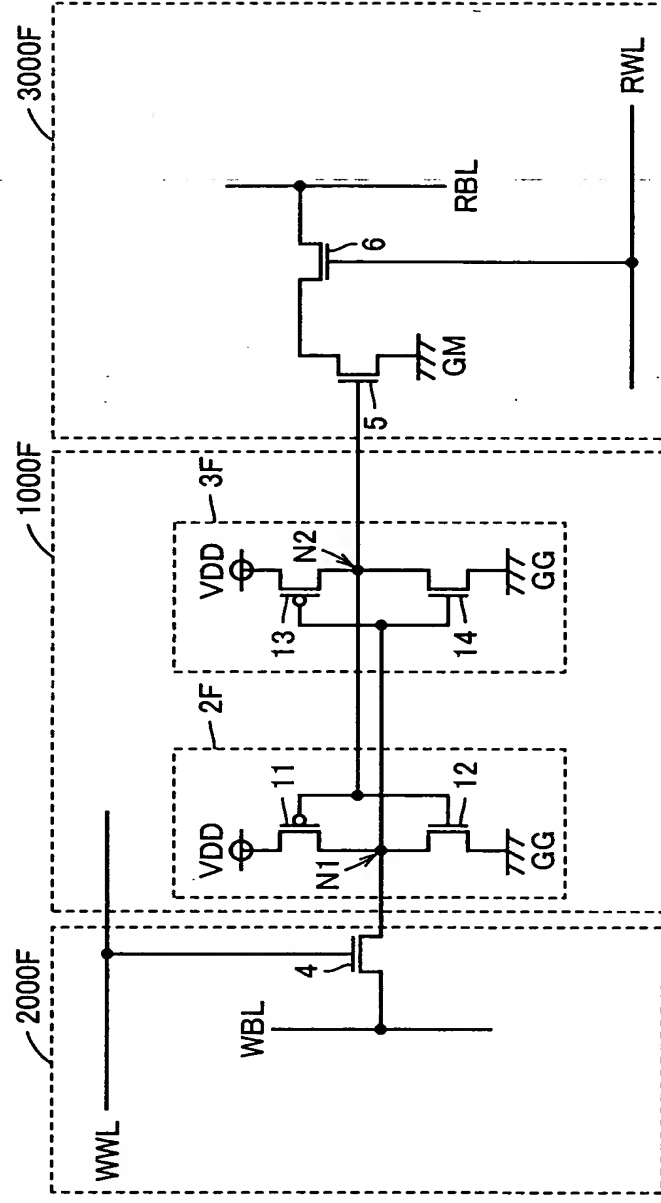


FIG.23

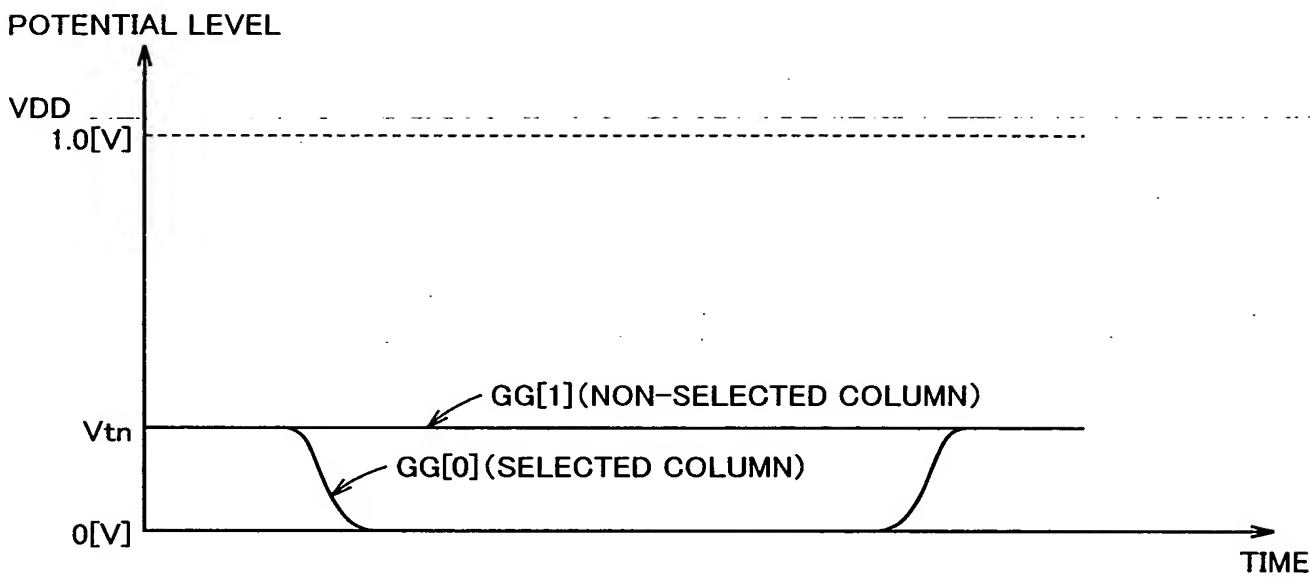


FIG.24

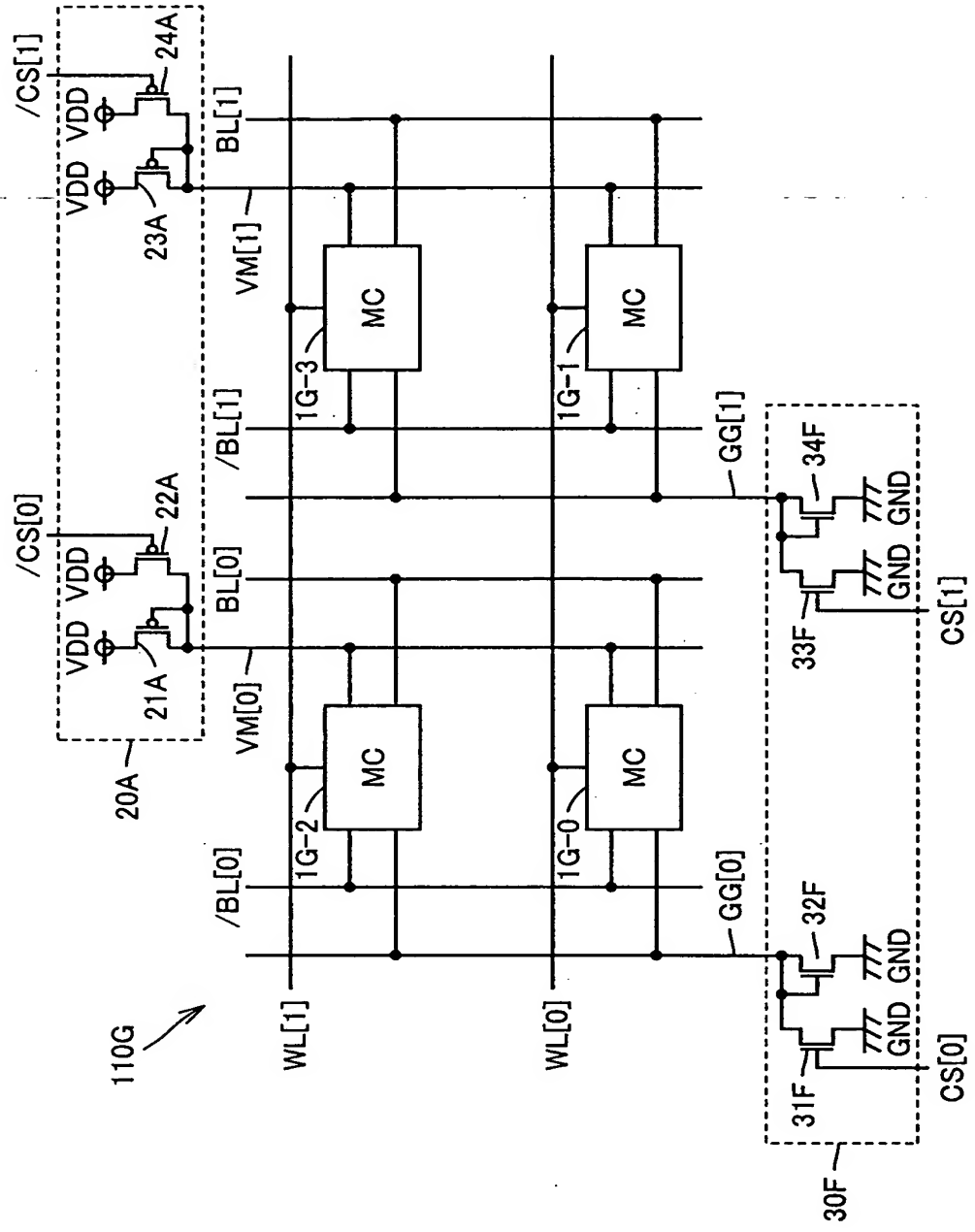


FIG.25

1G

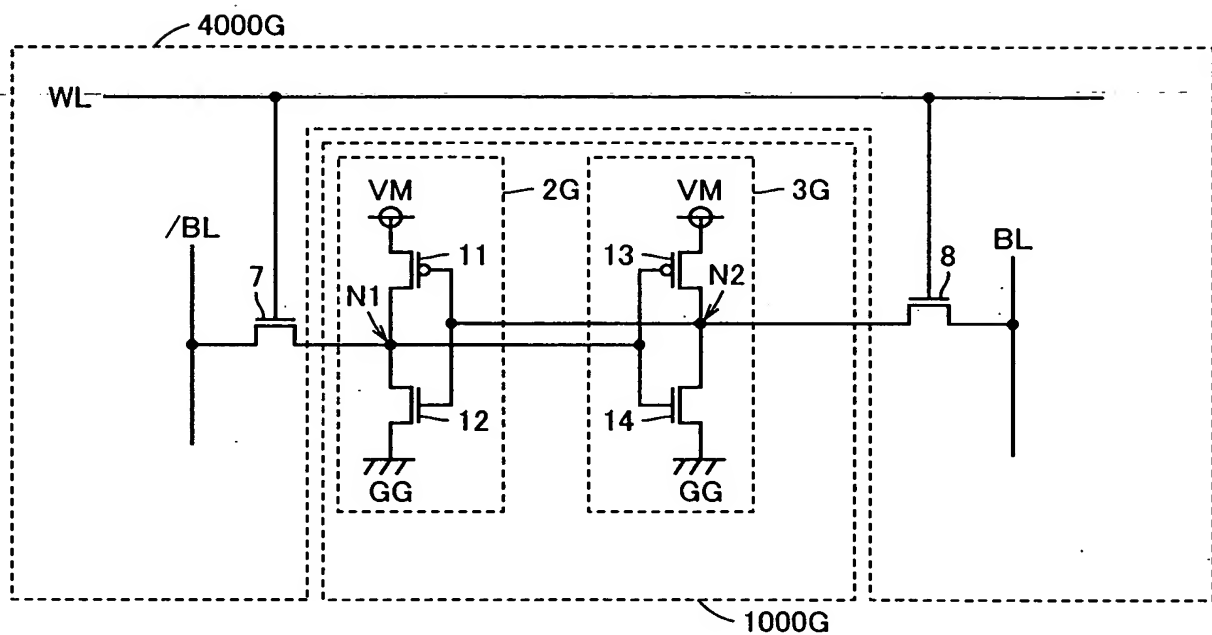


FIG.26

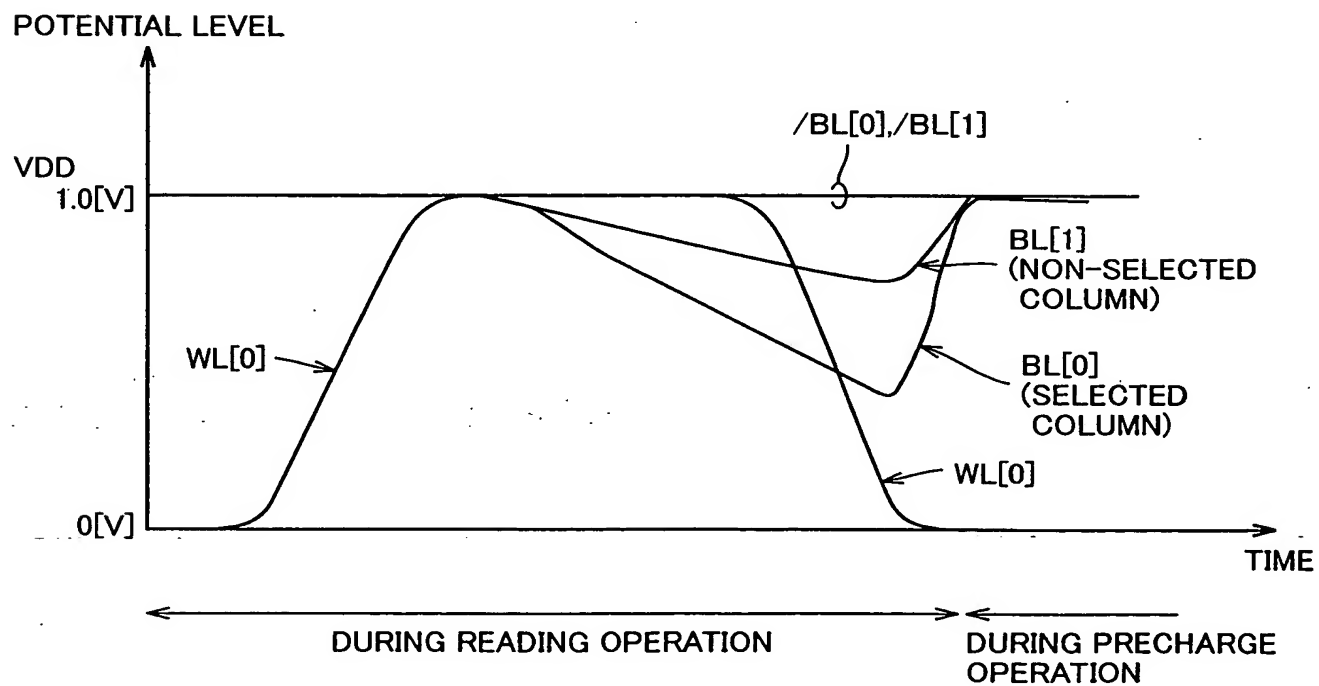


FIG.27

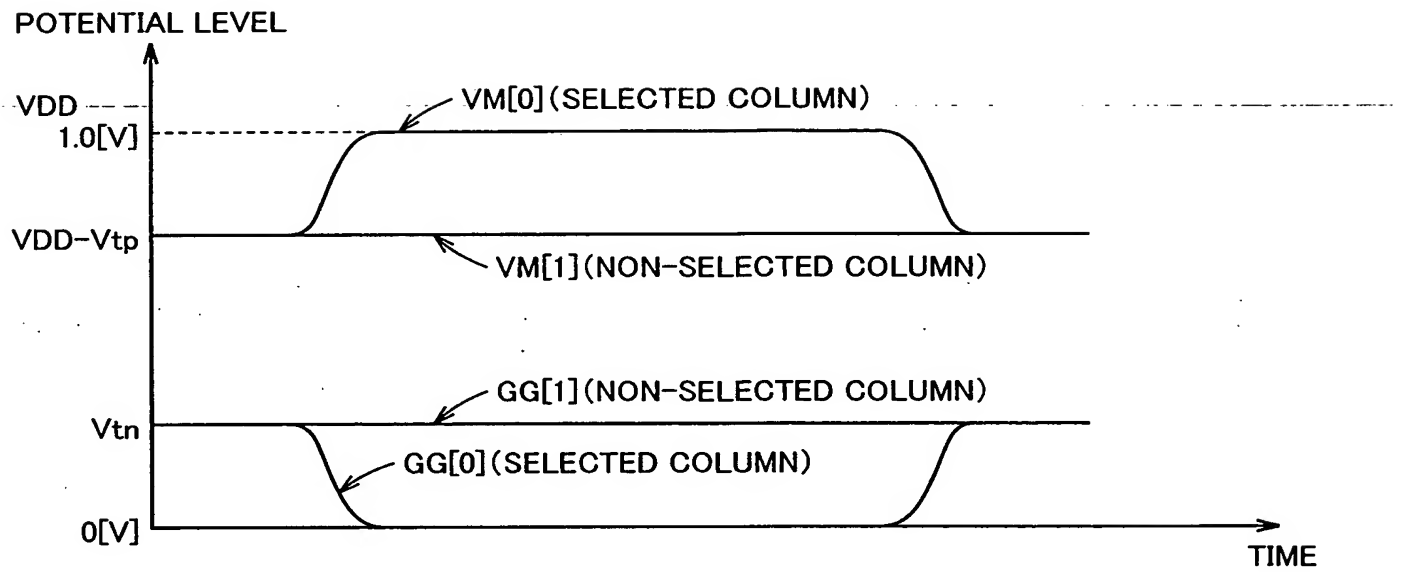


FIG.28

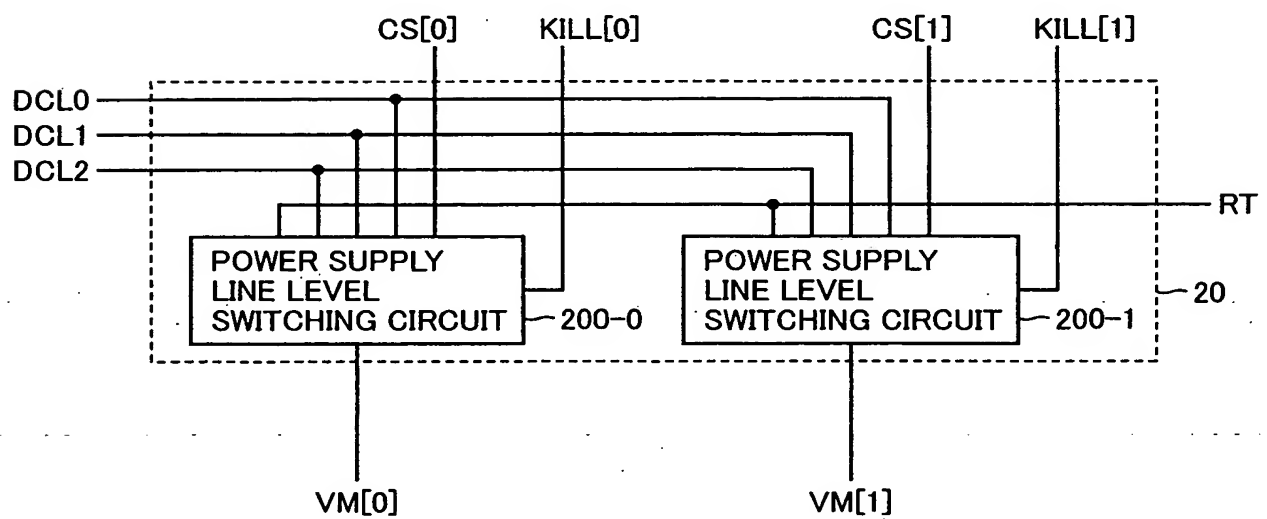


FIG.29

200

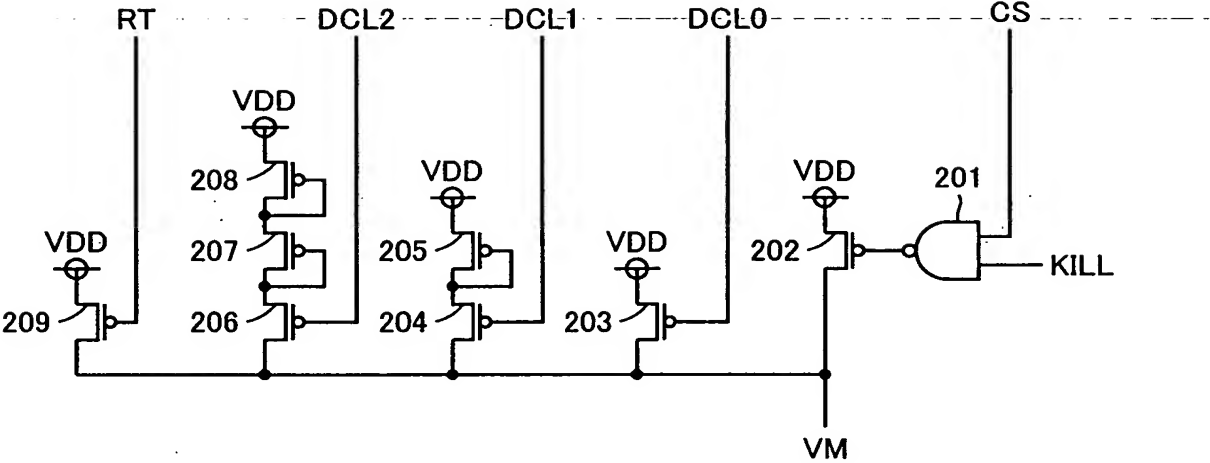


FIG.30

| OPERATION MODE                | RT | DCL2 | DCL1 | DCL0 | CS | KILL | VM                   |
|-------------------------------|----|------|------|------|----|------|----------------------|
| DURING ACCESS                 | X  | X    | X    | X    | H  | H    | VDD                  |
| DURING NON-ACCESS             | H  | L    | H    | H    | L  | X    | VDD-2V <sub>tp</sub> |
|                               | H  | H    | L    | H    | L  | X    | VDD-V <sub>tp</sub>  |
|                               | H  | H    | H    | L    | L  | X    | VDD                  |
| DURING REDUNDANCY REPLACEMENT | H  | H    | H    | H    | X  | L    | Hi-Z                 |
| DURING RETENTION TEST         | L  | H    | H    | H    | L  | X    | VDD                  |



FIG.31

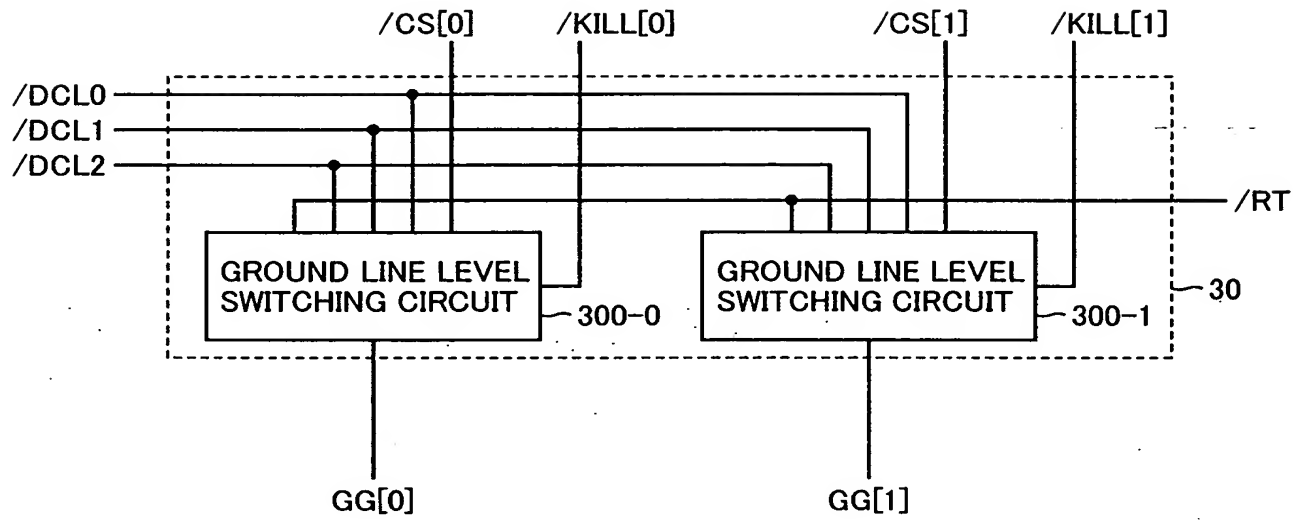


FIG.32

300

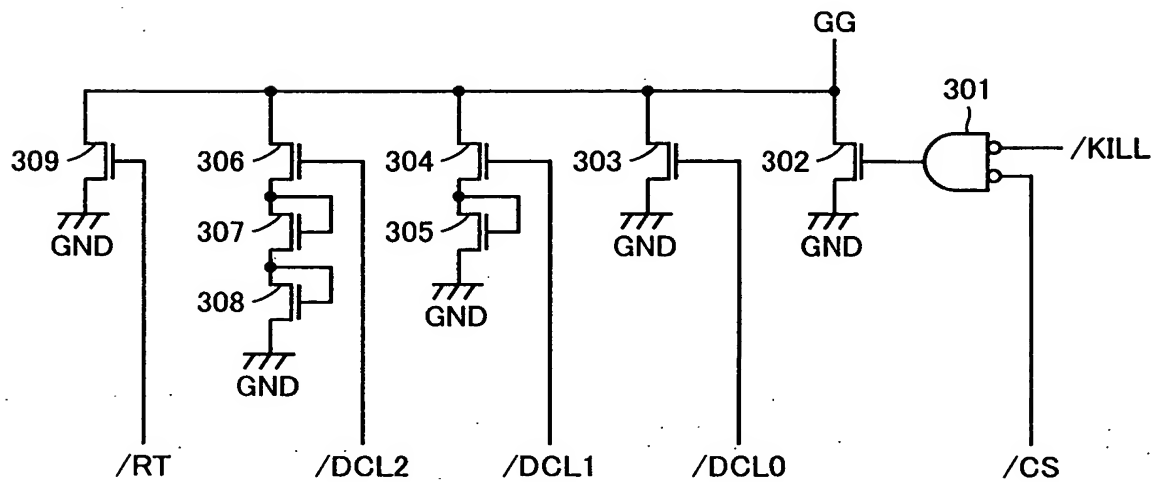


FIG.33

| OPERATION MODE                | /RT | /DCL2 | /DCL1 | /DCL0 | /CS | /KILL | GG                   |
|-------------------------------|-----|-------|-------|-------|-----|-------|----------------------|
| DURING ACCESS                 | X   | X     | X     | X     | L   | L     | GND                  |
| DURING NON-ACCESS             | L   | H     | L     | L     | H   | X     | GND+2V <sub>tn</sub> |
|                               | L   | L     | H     | L     | H   | X     | GND+V <sub>tn</sub>  |
|                               | L   | L     | L     | H     | H   | X     | GND                  |
| DURING REDUNDANCY REPLACEMENT | L   | L     | L     | L     | X   | H     | Hi-Z                 |
| DURING RETENTION TEST         | H   | L     | L     | L     | H   | X     | GND                  |

FIG.34

500

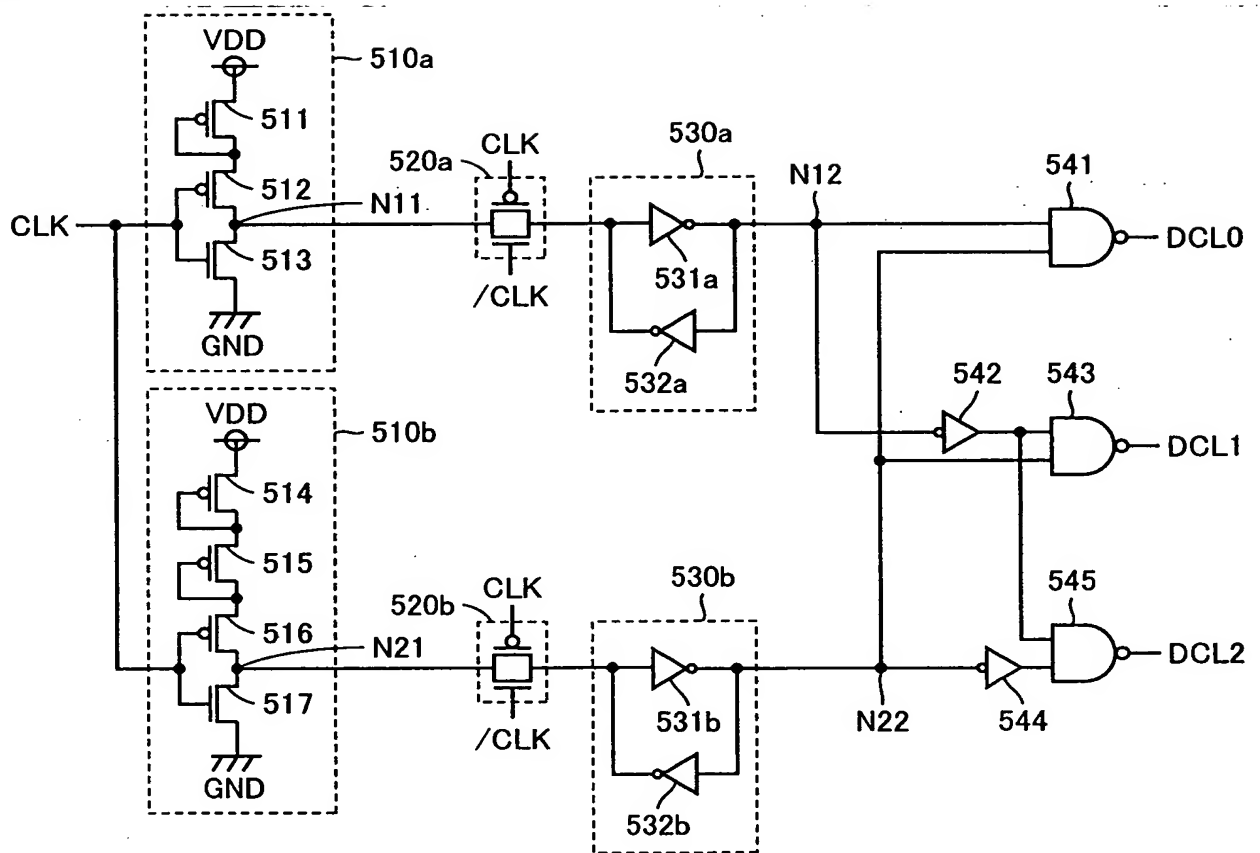


FIG.35A

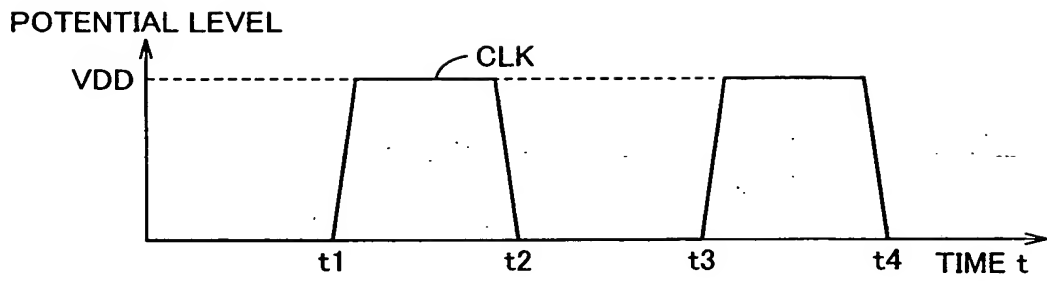


FIG.35B

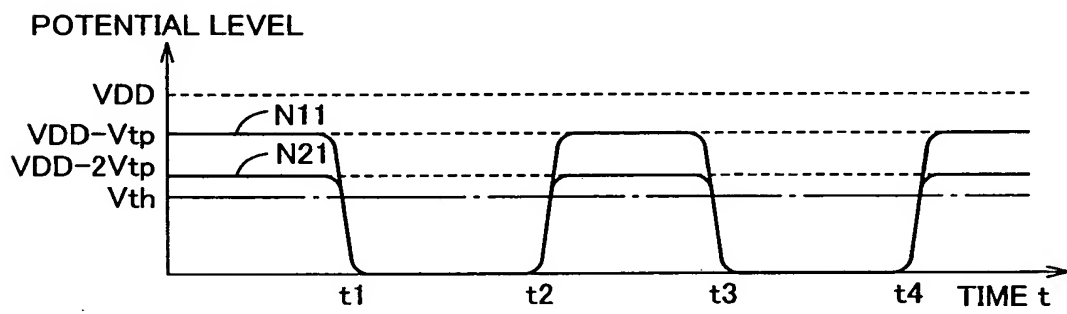


FIG.35C

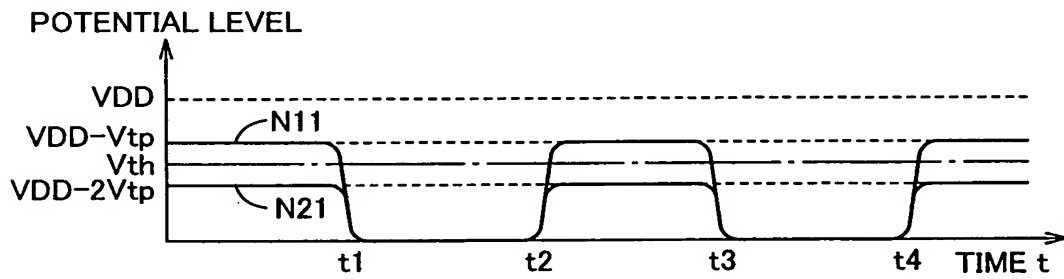


FIG.35D

